A LIVABLE ENVIRONMENT FOR WILDLIFE IS A QUALITY ENVIRONMENT FOR MAN

Montana Outdoors

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Stock Ponds Becoming Montana Duck Factories

Guest Article By: Jack D. Jones
BUREAU OF LAND MANAGEMENT
MALTA DISTRICT OFFICE

During the past twenty years, North America's prime waterfowl nesting area has suffered great losses from drainage, industrial development and intensified agriculture. This is true of the prairie pothole country, a vast region of glacier-gouged ponds that covers parts of Alberta, Manitoba, Saskatchewan, North Dakota, Minnesota and last, but in view of recent development, certainly not least — Montana.

U. S. Bureau of Land Management Photo

Breedng pairs of Canada geese are attracted to islands on small and large water areas throughout the Hi-line area of the Malta Bureau of Land Management District.

This region is but ten percent of the continent's total duck production area, but it produces more than half of North America's ducks. Up to 80 per cent of all mallards and pintails are produced in the pothole country in addition to great numbers of blue-winged teal, baldpate, and gadwall. These "puddle" ducks prefer the small water habitat characteristic of the prairies in contrast to "divers" such as redheads and canvasback which normally nest in larger marshes or wetlands.

Much of the loss of critical waterfowl breeding and nesting habitat has been offset through construction of stock ponds, particularly in eastern Montana. Nearly 8,000 of these ponds have been developed by the Bureau of Land Management in eastern Montana, and these attract breeding pairs of mallards, pintails, teal, gadwalls, and baldpates, the blue-ribbon ducks of the Central flyway. An untold number of ponds have also been constructed on private and state lands in the same area. In addition, this prairie region contains a large number of potholes of glacial depressions which fill during wet years providing additional "bonus" habitat.

The pond construction program has taken on even greater dimensions within the past ten years. Canada geese now nest on stock ponds as small as two surface acres if suitable nest sites are available. This local breeding population of geese has established itself naturally as a result of this attractive "new" habitat. With such a natural breeding base, an expansion of this population to other pond areas with suitable nesting habitat is inevitable. The Canada "honker" is known to have a strong homing instinct. The ability of nesting females, in particular, to

U. S. Bureau of Land Management Photo

A stock pond recently constructed which, with a minimum of effort and expense, included an island in addition to leaving the shoreline in a natural irregular condition.

return to the specific sites or ponds where they learned to fly as goslings appears to have resulted in the establishment of this breeding-base along the Hi-line in the Malta BLM district.

The Bureau of Land Management has now modified the reservoir development program to provide benefits beyond the initial purpose of livestock water. Stock ponds are an excellent example of modifying a going program to provide additional benefits for wildlife. Frequently, if the modifications are initiated at the time of construction, they can be done with little or no additional cost. Guidelines for certain modifications have been developed through a joint effort by personnel from Montana State University, the Montana Fish and Game Department, and BLM Wildlife Specialists and Engineers. Emphasis is presently being placed on guidelines involving island construction and shoreline manipulation.

Small islands are frequently planned into the actual construction phase. The value of islands to nesting geese and various species of ducks, such as gadwalls, scaup, and teal, is well known. Island habitat provides greater security for nesting waterfowl and will enhance brood survival to the flight stage. Nesting success for geese on islands has been reported as high as 90 per cent compared to 20 per cent on the mainland. Island construction is possible by cutting off peninsulas, throwing up dirt mounds on delta areas, and isolating natural knolls or humps during the construction operation.

Opportunities also exist for island construction on existing ponds under the regular reservoir maintenance program. Islands are easily thrown up during periods of low water levels with earthmoving equipment or with a dragline. Other modifications include leaving irregular shorelines and short peninsulas to produce ideal breeding and loafing areas for many species of ducks. Such irregularities, rather than a smooth "bowl-shaped" effect, adds that bit of privacy which nesting waterfowl seem to prefer.

Future pond construction on public lands will be justified more on the basis of multiple-use benefits rather than single purpose. The Bureau of Land Management constructs nearly 240 ponds per year in the eastern two-thirds of Montana, so we can be optimistic about the future of this program for waterfowl. The value of low-level dams for waterfowl production has already prompted Ducks Unlimited (Canada) to construct many ponds annually.

BLM is also supporting a research study with Montana State University to determine the relationship between rest-rotation grazing management and waterfowl production. This study, covering two grazing allotments in the Malta district, may show the way to even greater rangeland

U. S. Bureau of Land Management Photo

An existing stock dam where islands are being thrown up with a dragline during maintenance operations.

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benefits for waterfowl. Nesting cover adjacent to ponds is important to ducks and geese and are of special interest to BLM's new livestock grazing systems.

Habitat losses will continue to be paramount in the minds of persons having a deep interest in the well-being of migratory waterfowl. Likewise, the responsibility for creating and maintaining suitable habitat for these unique birds will be a keynote for BLM resource people managing the public lands of Montana and the Dakotas.

Director's Column

Season Setting Procedure

Early in March, the Commission will meet and set final deer, elk and bear seasons for 1970. The tentatives, which are the Department's recommendations for seasons, were compiled in early-January. They were mailed to sportsmens' and agricultural organizations and other interested conservation groups for evaluation and comment. It is hoped that anyone who desires to comment on these recommendations will do so. This is an extremely important part of our season setting procedure. The public must be brought into the program and a review of the procedures the Department uses for seasons may be in order.

A Commission policy governs the opening date of the general big game season. This date has been set as the third Sunday in October. It is necessary to establish a firm opening date so that people can plan their hunting well in advance. Considerable time was spent in analyzing the various land-use patterns and land user conflicts before it was determined that the third Sunday in October is best suited to the Montana situation.

The Departments recommendations for seasons, the tentatives, have been available for the public to examine for some time. These recommendations are based on the best available knowledge of big game species by all of our personnel. The most important facts used in establishing regulations come from the private lives of the animals themselves. Of paramont importance to all animals is a proper food supply. This is the reason that considerable time is spent evaluating the winter range situation of the various big game herds throughout the state. Range surveys made by game workers indicate the condition of big game forage and the basic trend of these plants towards improvement or deterioration. This is time consuming work; however, it is vital to evaluation of big game herds throughout the state. We have been fortunate this year in that most critical winter ranges have not been utilized to any extent. The game herds should come through this winter in fair shape.

In addition to evaluating the basic food supply, surveys are made of the game herds. When properly analyzed, these surveys show the trend in numbers. We cannot make total counts of game animals in herd units. This is an almost impossible task; however, we can deal with trend information showing whether the basic herds are increasing or decreasing. Classification counts are also made that give information on animal productivity. These counts show how many calves or fawns were produced per adult. When all information is evaluated, game managers have necessary information to determine whether the food supply on critical winter areas is adequate, whether the trend in animal populations utilizing this food supply is up or down, and how game is producing.

The harvest situation is evaluated. This is done on the basis of checking station information and mail questionnaires. This information is compiled by hunter districts. When hunter harvest information is plugged into other data relating to welfare of the animals, the type of season necessary to maintain, increase, or in certain instances, decrease the size of a herd can be recommended. The information is then presented on a district basis where all of the field personnel are involved. They may accept or change the recommendations according to other local information available. The district supervisors forward their recommendations to the State headquarters. The Fish and Game director's staff examines all district recommendations and makes necessary changes in order to make the separate proposals fit the state-wide game management picture. These proposals, then, become the tentatives and are mailed to cooperators for comment. This is an important step in the entire process. It gives our personnel an opportunity to meet with the various interested groups and discuss the seasons recommendations. It provides the department and cooperators with an avenue of communication and through this avenue, we the public can be better informed. The comments that come from evaluation by cooperators assist the Commission in determining the public response to management programs. It provides the Commission with a ready source of information on a local basis. When the Department's recommendations and the comments from the public are presented to the Commission, they are evaluated and final seasons are set. The process of season setting is somewhat tedious, but it provides for basing seasons on not only the best biological information, but also on public acceptance.

Frank H. Dunkle

Black Bear or Grizzly?

By Ken Greer

The Montana Fish and Game Commission has been given the authority by legislation to manage grizzly bears as a rare species, which they are. In order to manage the bears properly, such things as ages, sexes, and numbers of grizzlies annually harvested must be known as accurately as possible. It's a matter of record that some black bear are mistakenly reported as grizzlies, and this is understandable. In order to keep these mistakes to a minimum, the Commission will be requested to pass regulations requiring that hunters turn in both the hides and sculls of their grizzly trophies for tagging. The skulls will be cleaned in the department's laboratory at Bozeman and then examined to make certain of the species and to gather age and other information. They will then be returned to the hunters.

One might think that it's a simple matter to distinguish between black and grizzly bears, but the fact is that it is sometimes difficult even in a nose to nose situation. Size, color and texture of the fur, and body conformation vary greatly among both black and grizzly bears. The dish-faced nose and forehead area commonly believed a distinguishing feature of grizzlies is not entirely reliable because it also occurs among black bears. On the other hand, the rather straight nose-forehead profile typical of black bears can also be found among grizzlies.

When identification is difficult, there are telltale clues if the animal can be examined closely. Persons who know what to look for can usually distinguish between a grizzly and black bear hide by looking at the feet. When even foot examination leaves a question, the skull, and particularly the teeth, affords a final check. After examining a host of grizzly bears at the fish and game laboratory in Bozeman, guidelines have been devised for identification of bear species from feet and skulls. Following are features which have proven very reliable indicators for identification.

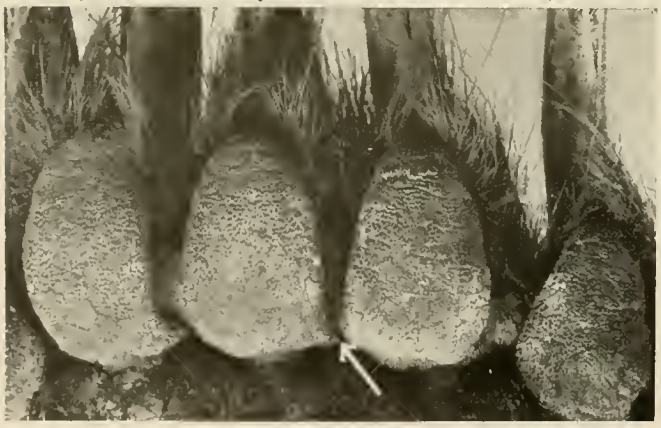
RIGHT FRONT FOOT

GRIZZLY BEAR

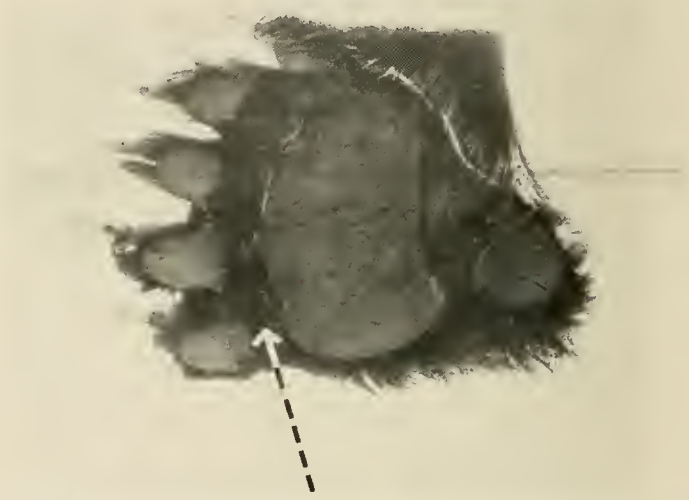
Sparsely furred between the toe pads and the foot pad. Claws not as curved, nor base—from top to bottom—as deep as in black bear.

The outside curve lengths of the middle claws range from 2 to 4¼ inches, and average 3 inches. About 40% of the claws are greater than 3 inches long.

Skin between the toe pads extends almost half way up the length of all pads. The basal edges of some toe pads (arrow) are occasionally fused on one or more digits.



BLACK BEAR



Densely furred between toe pads and the foot pad. Shape and curve of black bear front claws are more like those of a cat than are grizzlies'.

The outside curve lengths of middle claws range from 1 to 2¼ inches, averaging 1¾ inches. Less than 10% of the claws exceed 2 inches.

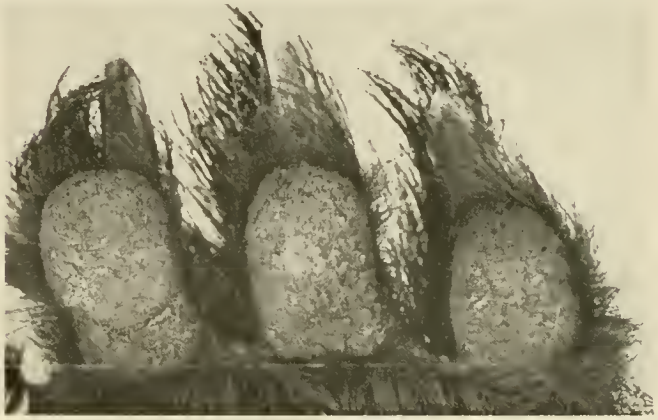
Skin between the toe pads is limited to the base of each pad, except for the outside digit. Bases of the toe pads (arrow) are not fused on any digit.

GRIZZLEY BEAR — RIGHT REAR FOOT — BLACK BEAR

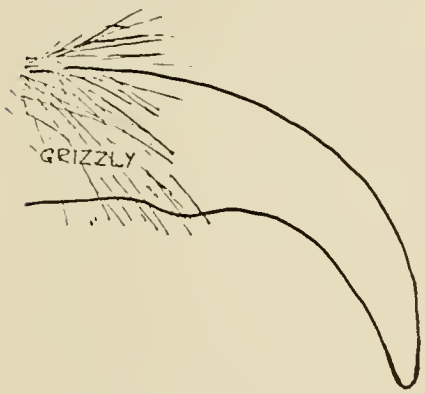
Claws are short and foot is sparsely furred between the toe pads and foot pad. Usually, there is no wedge of fur at the instep of the pad.

Claws are short and foot is densely furred between the toe pads and the foot pad. There is frequently a wedge of fur at the instep of the foot pad.

Skin between the toe pads extends part way up the length of all pads. Bases of one or more toe pads are frequently fused.

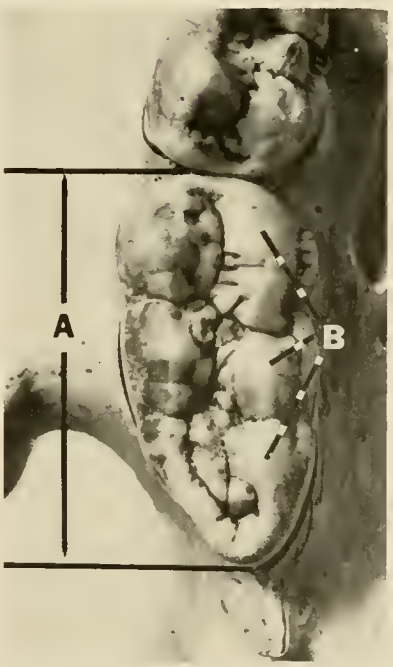


Skin between the toe pads is limited to the base of each pad, except for the inside digit. Toe pads are not fused at their bases on any digit.



General conformation of grizzly claw.

General conformation of black bear claw.



Grizzly-Length of last upper molar about 1¼ to 1¾ inches long (A).

On teeth of young bear, three lobes are usually prominent on the inside edge of this molar (B).

Black bear—Length of the last upper molar is about 7/8 to 1 1/16 inches long (A).

Lobes (B) are usually not distinct on the inside edges of these molars, even on teeth of young bear.

Wildlife as Index to Environmental Health Stressed in National Wildlife Week, March 15-21

"Seen Any Wildlife Lately?" at first sounds like a simple-minded question, but in context with today's problems, it's loaded. If you live in any but the larger Montana cities, you've no doubt seen wildlife. If you live out in the country (which most Americans don't), chances are you can say, "Sure. Just this morning I saw. . ." and start naming animals. If you live in one of America's large model cities or one of the better-planned suburbs, you may have seen a variety of birds, some squirrels, and maybe a raccoon or a hawk; or luckier yet, you may have unpolluted water nearby where you caught some fish last weekend.

In Montana we are still prone to take our wealth of fish and game for granted. If you lived like the average American, your environment would have seen too much "Progress" for any of this to be possible. Pigeons, sparrows, and rats are wild, after a fashion, but they are about all that's left in the polluted air and in and around the filthy water and miles of concrete most Americans call home. "Seen Any Wildlife Lately?" It's a good question, because wildlife is a measure of the quality of man's environment.

Who needs wildlife? In the sense that many wild creatures are a step ahead of us in their sensitivity to polluted air and water, chemical pesticides, and the absence of naturalness --in essence an indicator of environmental quality—we all need wildlife for our survival. For when these other creatures are gone, what's left is a squalid environment for us.

Americans are belatedly awakening to the dangers of their self-induced blanket of poisonous gases and garbage heaps, pesticide-infested surroundings, sewage-choked waters and the sterility of paved-over landscapes. We could have recognized the dangers sooner had we paid attention to the warning signals and to alarms of many wildlife workers.

National Wildlife Week, March 15-21, sponsored by the National Wildlife Federation and its 49 state affiliates, asks, "Seen Any Wildlife Lately?" The answers are vitally important, because abundant wildlife is more than America's heritage; it's our key to survival.

Diversion Tactics

Casting a dry fly into a dry trout stream is what fishermen have nightmares about, but many fishermen have gone to a favorite stream only to find such a nightmare has come true. Dewatering of Montana trout streams is common during the summer months. The needs for agricultural irrigation place a heavy demand on the already low summer stream flows. Structures to divert water from streams onto farm lands can be observed on many streams during the irrigation season.

Irrigation diversions take many forms. One of the most common is diking off streambeds. This is a cheap and easy way to build a dike, but it is strictly a temporary means to an end. Each year, following high water, the dike must be rebuilt.

The accompanying photographs were taken on the Bitterroot River at the mouth of Bass Creek. They illustrate what happens to an irrigation dike built of streambed material. This dike has been built (and rebuilt) for a number of years. The photos show that the dike is strictly temporary and its construction causes considerable disturbance to the stream. The disturbance results in a direct loss to fish and other aquatic life by dewatering the channel and drying up the streambed. The greatest loss is to the fisherman. Present Montana law would prohibit a state, county or municipal agency from this sort of stream alteration without some mitigative measures, but does not prohibit this type of work if it is done by a private individual.

Newly built irrigation dike on channel of Bitterroot River. Canal headgate is off left side of photo. July 27, 1966.

Little remains of the dike after high water of May, 1967.

The cycle is completed. The streambed again becomes the dike. August 2, 1967.

"Montana Recreation Lake Program"

By John C. Peters

Montana is blessed with a lo of high quality water-oriented recreation. Several of our rivers — the Madison, Yellowstone, and Big Hole — rank among the top ten trout fishing streams in the United States. In addition to a number of large man-made lakes built as multi-purpose water development projects by state and federal agencies, Montana has many large natural lakes. The most noteworthy natural lake is Flathead which covers an area of 188 square miles and is the third largest lake west of the Mississippi River drainage. Within our state, we have several thousand high mountain lakes, many of which are isolated and get little use. It is unfortunate that these waters are not equally distributed throughout the state. The western third of the state is water-rich, the central portion lacks water especially in the northern part, and the eastern third is just plain water-poor. Most water development projects have been built in the western and central parts of the state, leaving the water-poor eastern area even relatively poorer.

The Fish and Game Department has been able to work rather successfully with the road building community protecting trout streams as a result of Montana's Stream Preservation Law which was first enacted in 1963. Because of the good working relationships that have developed over the years, Montana highway officials asked the department how recreation lakes could be built in conjunction with highway construction. It was pointed out that lakes could be developed from borrow pits or by utilizing road embankments as dams where the roads cross drainages. Successful programs developed by fish and game and highway people in other states were used as a basis to describe depths, area, water quality, etc., necessary to make a lake suitable for recreation.

By using highway embankments as dams, areas such as this may become small lakes, providing fishing and other water oriented recreation.

Montana's program began in 1967 and initially was limited to the development of borrow pits into lakes. Two such lakes are now under construction along Interstate 90; one near Drummond, the other near Missoula. Presently development is underway on another borrow pit site

north of Butte on Interstate 15. The development of these lakes will involve no fish and game costs for construction. The department's expenditures of money will be for recreation and park facilities.

It became apparent that the chances for borrow pit lake development are extremely limited in the eastern part of Montana. If lakes are to be built here where there is a real need for water-oriented recreation, highway embankments must be used across intermittent drainages. This means that the Fish and Game Department needs money to pick up the difference in cost between a road built with a regular highway embankment and one built as a dam. In 1969, the fish and game went to the Montana legislature requesting and appropriation for this program. It was pointed out that investigations revealed several feasible sites along Interstate 94 east of Billings. The legislature allowed $100,000.00 for this program which could be matched by another $100,000.00 from the Bureau of Outdoor Recreation.

Everything appeared rosy for the program until it was found that state capital construction bonds could not be sold at 5½% interest which was the legal maximum set by the legislature. Rather than wait for an improvement in the bond market, it was decided to attempt one lake on our own. This meant finding a relatively small facility — one that could be handled financially.

Such a site was found on Highway 200 S on Hay Creek between Glendive and Circle. This combination highway-dam embankment will impound about fifty surface acres of water. It will be about 1,200 feet long and have a maximum height of approximately thirty feet. The State Highway Department has been most cooperative in working on this project. Using their facilities at cost, the department has a detailed map, soil information, and foundation data at the proposed site. This information has been given to a consulting engineering firm so they can prepare an engineering feasibility report and proceed with the design of the dam. It is possible that this dam could be constructed by January 1, 1971.

Preliminary investigations are also proceeding on three other sites. One of these sites would make a lake larger than one square mile in area. The sites are tied down, now all that is needed is the money to build these highway-dam embankment recreation lakes. The recreation lakes program could fill the need for more water-oriented recreation, especially where it is badly needed, in the relatively water-poor part of Montana.

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